Aug. 7, 1934. G. B. BENANDER 1,969,544

PLUG RECEPTACLE

Filed Oct. 14, 1931

Fig. 1.

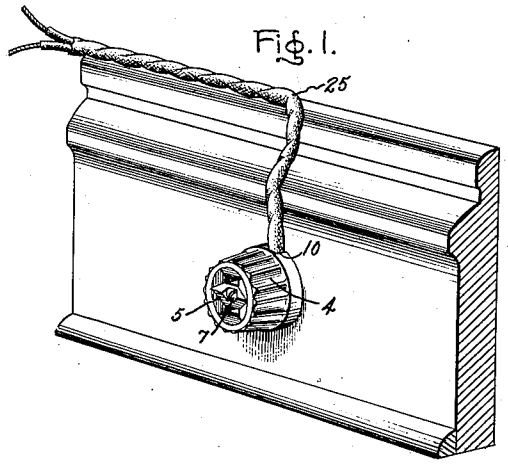


Fig. 2.

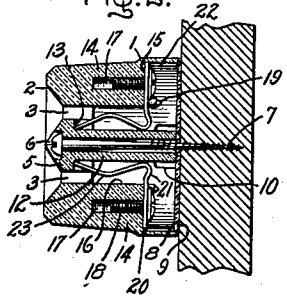


Fig. 3.

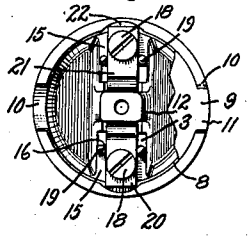


Fig. 4.

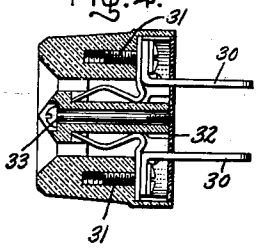


Fig. 5.

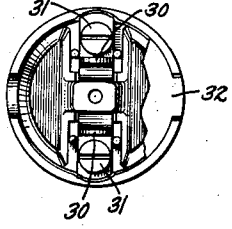


Fig. 6.

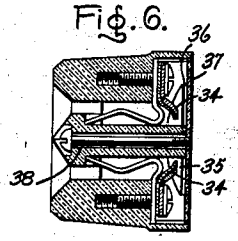
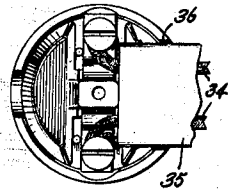


Fig. 7.



Inventor:
George B. Benander,
by Charles V. Tulla
His Attorney.

Patented Aug. 7, 1934

1,969,544

UNITED STATES PATENT OFFICE

1,969,544

PLUG RECEPTACLE

George B. Benander, Bridgeport, Conn., assignor to The Monowatt Electric Corporation, Bridgeport, Conn., a corporation of Connecticut

Application October 14, 1931, Serial No. 568,798

1 Claim. (Cl. 173—338)

The present invention relates to plug receptacles and especially to plug receptacles for use in outside or open wiring as opposed to concealed wiring.

The object of my invention is to provide an improved plug receptacle which is simple in structure, easy to use, and capable of being manufactured at low cost.

For a consideration of what I believe to be novel and my invention, attention is directed to the following specification and claim appended thereto.

In the drawing, Fig. 1 is a perspective view showing a plug receptacle embodying my invention mounted on a baseboard; Fig. 2 is a transverse sectional view of the plug receptacle shown in Fig. 1, the plug receptacle being attached to a baseboard; Fig. 3 is a face view of the plug receptacle looking at it from the inner end, a part of the plug receptacle being broken away; Figs. 4 and 5 are views similar to Figs. 2 and 3 of a modified form of the invention; and Figs. 6 and 7 are similar views of another modification.

Referring to the drawing, the husk or shell of the plug receptacle comprises a side wall 1 and an end wall 2, the latter being provided with openings 3 to receive the contacts or prongs of a standard plug connector. The shell is preferably circular and may be provided with longitudinally extending ribs, as indicated at 4 in Fig. 1, in order to give the shell a pleasing appearance. End wall 2 is dished inwardly and extending transversely across the end wall between openings 3 is a bridge 5 in which is a countersunk opening 6 to receive a fastening screw 7. The sides of the dished wall and of the bridge slope inwardly toward openings 3 so as to guide the plug contacts to the openings when a plug is being connected to the receptacle. The end of the shell opposite wall 2 is open and adjacent its edge is an annular shoulder 8 on which rests a sealing plate or disk 9 of insulating material such as a suitable fibrous material. Shoulder 8 is so located that disk 9 is flush with the end of the shell so that the device has a flat inner end. In the edge of the shell at its open end are one or more notches 10 for the passage of an electrical conductor cord, and on disk 9 are projecting ears 11 which close the open ends of the notches. In the present instance two notches 10 arranged on opposite sides of the shell are shown. I prefer this arrangement as it enables the use of one conductor cord running into the receptacle and, if desired, a second conductor cord running from the receptacle to another device.

Inside the shell and projecting rearwardly from its closed end is a center post 12 located between the openings 3. Post 12 is preferably rectangular and is provided with a central opening for the passage of screw 7. The sides of post 12 adjacent openings 3 are spaced back somewhat from the edge of the openings to provide shoulders 13. Formed integral with the inner wall of the shell and located on opposite sides of center post 12 are side posts 14 having flat inner surfaces 15 spaced inwardly from the open end of the shell. Side posts 14 have smooth flat side surfaces 16 which are opposite the flat sides of middle post 12 and form continuations of the outer edges of openings 3. In side posts 14 are screw threaded openings 17 adapted to receive binding screws 18. On the inner corners of side posts 14 are projecting fingers 19 which provide between them grooves in which are located the angular end portions 20 of contacts 21. In the inner end of the shell adjacent the side posts are recesses 22 in which the ends of portions 20 are located. By this arrangement, it will be seen that the portions 20 of the contacts 21 fit between the spaced posts 19 and the edges of recesses 22 whereby they are held firmly from turning movement. Fingers 19 and the side edges of recesses 22 thus form in substance grooves in flat surfaces 15 in which the end portions 21 lie and in which they are held by binding screws 18. The other ends of contacts 21 engage shoulders 13 and are bowed outwardly, as indicated at 23, toward walls 16 so as to overlie partially openings 3. When binding screws 18 are screwed down the contacts 21 are clamped firmly between the heads of the screws and shoulders 13. By providing grooves in which the end portions 20 of the contacts fit, it becomes unnecessary to provide walls along the sides of the main portions of contacts 21 in order to hold them from turning. As a result, middle post 12 and side posts 14 may be made relatively narrow, being shown in the present instance as being but little wider than contacts 21, and the space between the posts in which the contacts are located need not be provided with side walls but may communicate directly with the spaces between the sides of the posts and the side wall of the shell. This arrangement has substantial advantages from a manufacturing standpoint.

The outer wall 1, end wall 2, and posts 12 and 14 are formed as one integral construction and may be made from a suitable moulding compound. The arrangement shown can be made by a simple moulding operation which may be performed at low cost.

The contacts 21 comprise strips of copper or

other suitable material and are readily formed by a stamping operation. It will be seen that the plug receptacle proper comprises only four different elements, the shell, the two contact strips 21, the two screws 18 and the disk 9. The screws 18 perform the function both of binding screws and of means for holding the contacts 21 in place. As will be obvious, the assembling of the construction is very simple, requiring only the fastening in position of the two contacts 21 by means of the screws 18 and the insertion of the fastening screw 7. The fastening screw 7 extends through the fiber plate 9 serving to hold it in place, clamping it against the end of center post 12.

The device is intended particularly for use in providing a plug receptacle at some point on a baseboard distant from a source of supply. In Fig. 1 the device is shown as being fastened to a baseboard and leading therefrom is a cord conductor 25. This may be run along the upper edge of the baseboard to any suitable source of electrical energy, for example, another plug receptacle. If desired, a second conductor cord may be run from the device shown in Fig. 1 to another plug receptacle similar to that shown in Fig. 1, or to some other device. In use of the construction it is necessary merely to remove the disk 9, attach the conductors of the cord to the binding posts 18, replace the disk 9, and then fasten the plug receptacle in position against a baseboard or other wall by means of the screw 7. The entire operation can be performed with the use of only a screwdriver.

The device shown in Fig. 1 is adapted for use also for connection to a plug receptacle by providing plug contacts fastened in place by the screws 18. This is illustrated in Figs. 4 and 5 wherein plug contacts 30 are shown fastened in position by the screws 31 which correspond to the screws 18 of Figs. 2 and 3. The insulating plate 32 is provided with openings through which prongs 30 pass and it may be held in position by frictional engagement with these prongs, a screw connection being omitted. However, if found desirable a screw connection, as indicated at 33, may be provided. Otherwise, the construction shown in Figs. 4 and 5 is the same as that shown in Figs. 1, 2 and 3.

The construction is also well adapted for use with a flat conductor adapted to extend under a rug and termed usually "rug wire". This is illustrated in Figs. 6 and 7 wherein the rug wire, which comprises two conductors 34 embedded in a flat rubber strip 35 extends through an opening 36 in the edge of the shell which opening corresponds to the openings 10 of Figs. 1, 2 and 3, except that it is enlarged sufficiently for the passage of the rug wire. The insulating plate 37 is then fastened in position by a screw 38, the end of which is flush with the surface of plate 37. By this arrangement, the plug receptacle may rest flat on a floor. If desired, however, a fastening screw such as that shown in Figs. 2 and 3 may be utilized for fastening the plug receptacle permanently in position to a wall.

What I claim as new and desire to secure by Letters Patent of the United States, is:

A plug receptacle comprising a shell having a side wall and an outer end wall provided with spaced plug contact openings, the inner end of the shell being open, a center post and side posts projecting rearwardly from the inner surface of the end wall, said side posts having flat ends provided with screw threaded openings, and with means providing grooves, means forming shoulders at the base of the center post, contacts having ends which rest in said groove and ends which engage said shoulders, and binding screws in said openings for clamping the contacts in position.

GEORGE B. BENANDER.